

A NEW SPECIES AND TWO NEW RECORDS OF HALIOTREMA (MONOGENEA, ANCYROCEPHALIDAE) FROM MARINE FISHES IN HAINAN ISLAND, CHINA

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Abstract This paper reports a new species and two new Chinese records of the genus *Haliotrema* Johnston & Tiegs, 1922 collected from the moorish idol *Zandus cornutus* (Linnaeus) in the South China Sea (Sanya Region, Hainan Island). They are *H. sicklocirrus* sp. nov., *H. tubulovagina* Yamaguti, 1968 and *H. dempsteri* (Mizelle & Price, 1964) Young, 1968. The moorish idol is new host records of the latter two species.

Key words Monogenea, Ancyrocephalidae, *Haliotrema*, new species, new records.

1 Introduction

Since Johnston & Tiegs (1922) erected the genus *Haliotrema*, over 100 species have been reported all over the world. However, Kritsky & Boeger (2002) established the genus *Euryhaliotrema* which was characterized by the bulbous base of the copulatory organ, with *E. chaoi* from the gills of *Plagioscion* sp. in Brazil as type species, 2 and 9 species transferred from *Pseudohaliotrema* and *Haliotrema*, respectively. So far 53 species of the genus *Haliotrema* have been reported in China, among them 51 species referred to Wang et al. (2003) and 2 species discovered by Li & Chen (2005). Among them some species remain to be studied, ought to be classified in the genus *Euryhaliotrema*.

In the present paper, the monogeneans collected from the gills of moorish idol, *Zandus cornutus* (Linnaeus) in the South China Sea is first reported. These worms belong to the genus *Haliotrema*, Ancyrocephalidae, Dactylogyriidea. Two species, *H. tubulovagina* Yamaguti, 1968 and *H. dempsteri* (Mizelle & Price, 1964) Young, 1968 are new records for China. But third one differs distinctly from the known species of the genus and is regarded as new.

2 Materials and Methods

The host fishes the moorish idol, *Zandus cornutus* (Linnaeus) was obtained from the coast of Sanya, Hainan Island, China. The gills of all fishes were separately removed to flat-bottomed glass dishes containing seawater. Each part of gills was carefully examined for helminthes under a stereoscopic microscope. The monogeneans collected from the gills were observed alive and mounted in Berlese's fluid. The figures were drawn with the aid of drawing apparatus (Nikon YS100). All measurements were made with a micrometer and presented in micrometres. The measuring methods and terminologies are those of Gussev (1976). All the type specimens are deposited in the Department of

Life Sciences, Hunan University of Arts and Science.

3 Descriptions

Haliotrema sicklocirrus sp. nov. (Figs. 1-5)

Hosts. *Zandus cornutus* (Linnaeus).

Location. Gill filaments.

Locality. Sanya (18°2' N, 109°5' E), Hainan Province.

Date. 16 Apr. 2004.

No. of specimens studied: 7.

Type-specimens. Holotype No. HNSY20040416 (1) and paratypes No. HNSY20040416 (2-7).

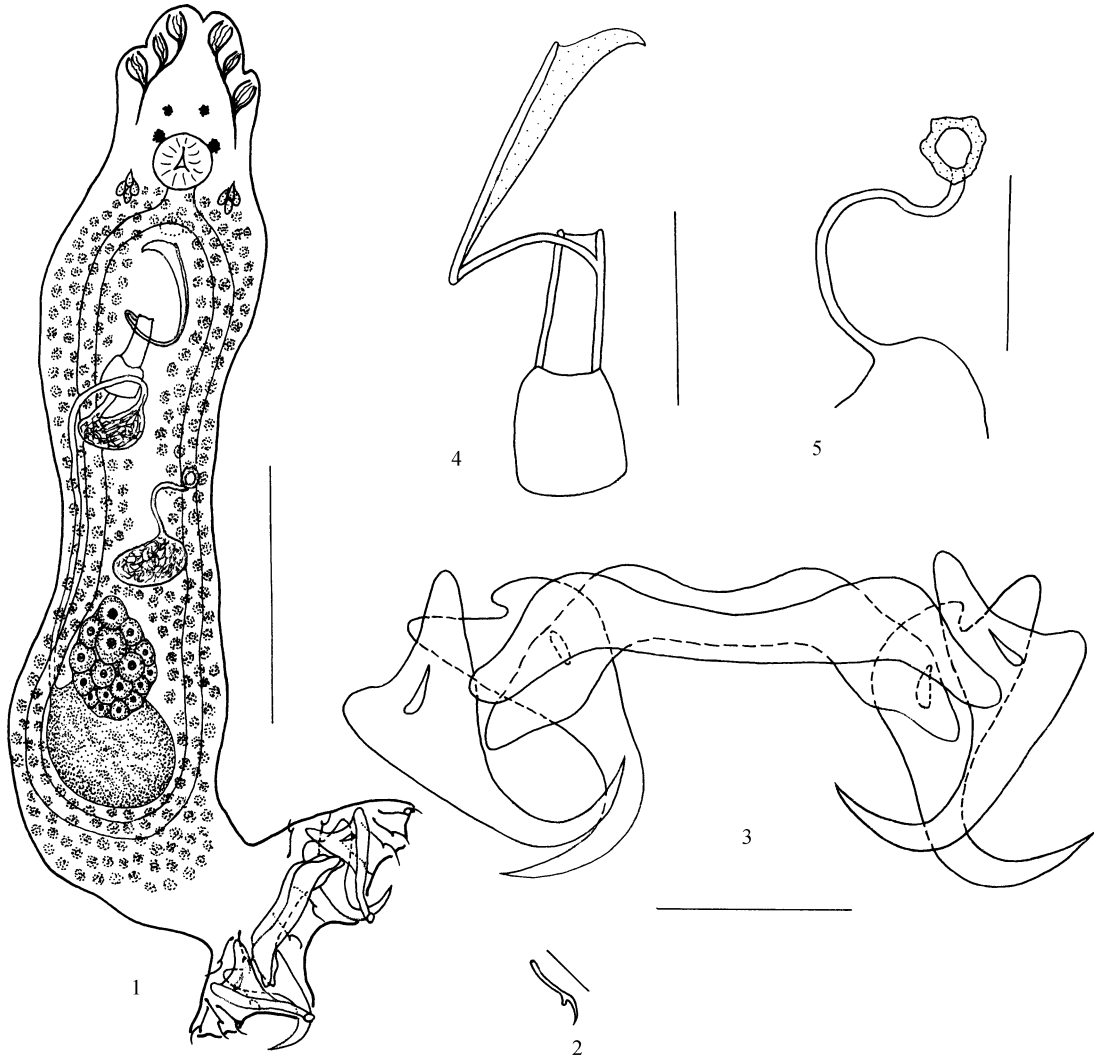
Smaller ancyrocephalid. Body is fusiform or flattened dorsoventrally, comprising cephalic region, trunk and haptor, measures 337-405 in length and 67-80 in width. Three pairs of bilateral head organs and two pairs of eyespots are present in the cephalic region. The spherical muscular pharynx measures 17-23 in diameter. It leads into a short esophagus, which bifurcates into two intestinal crura, the latter being confluent posteriorly.

The haptor which is well set off from body proper, measures 52-65 in length, 87-113 in width, and is armed with two pairs of central anchors, two connective bars and 7 pairs of hooks. The two pairs of anchors basal have broad portion with a fenestra. The dorsal anchor total length 35-37, basal portion 29-31, point portion 7-10, inner root 11-14 and outer root 4-5. The ventral anchor total length 35-37, basal portion 30-33, point portion 9-12, inner root 8-10 and outer root 3-5. Dorsal connective bar 5-6 in length, 60-66 in width, its sub-middle portion protruded forward. Ventral connective bar 6-8 in length, 55-63 in width, and both distal portions slightly enlarged and curved posteriorly. The hooks measure 10-13 in length.

Testis is round to ovoid in shape and measures 50-62 in length and 35-45 in width. The vas deferens arises from the anterior end of testis and then looping around the left intestinal cecum, ends at the base of copulatory

apparatus, and enlarges to form a seminal vesicle. The copulatory apparatus consists of cirrus, disc and an accessory piece. The cirrus is short and straight tube, total length 19-22 measured along curvature; basal portion slightly enlarged, diameter 7-11, connecting with short cylindrical disc (length 10-13, diameter 10-13). Accessory piece sickle-shaped, total length 45-53, links to the distal portion of the cirrus, sub-terminal portion

turning and inner side of distal portion widened, tape-like. The oval shaped ovary is in the anterior end of the testis and measures about 37-50 in length and 25-32 in width. Vaginal aperture submarginal; the vaginal canal (about 30-35 in length) connected to seminal receptacle, and the latter is about 25 × 15 in size. Vitellaria dense. Egg has not been observed.



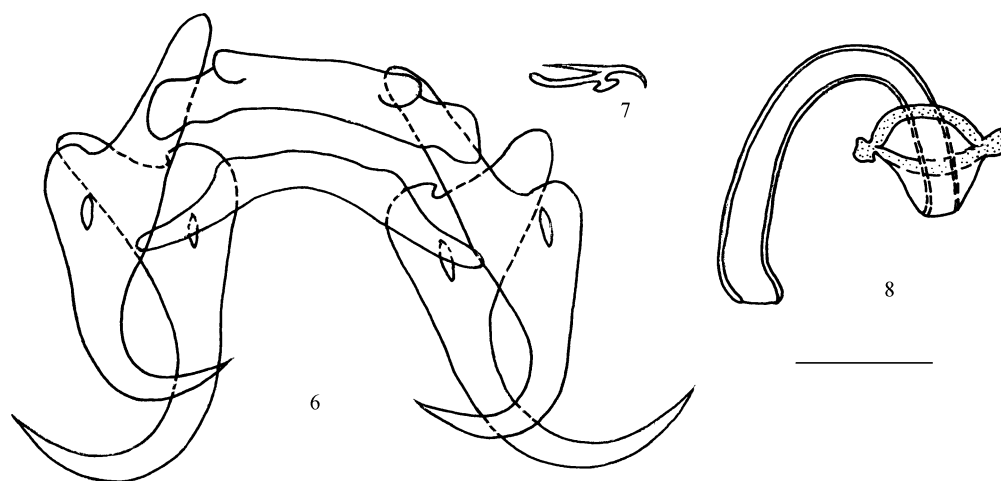
Figs. 1-5. *Haliotrema sicklocirrus* sp. nov. 1. Whole-mount, dorsal view. 2. Hook. 3. Central anchors and connective bars, dorsal view. 4. Copulatory apparatus, ventral view. 5. Vagina, dorsal view. Scale bars: 1 = 100 μm , 2 = 10 μm , 3-4 = 25 μm , 5 = 20 μm .

Remarks. The new species is similar to *Haliotrema scyphovagina* Yamaguti, 1968 in the shape of copulatory apparatus and the haptor chitins, but differs in the nature of the accessory piece which is a flagellum-like filament projects in the latter but sickle-shaped piece in the new taxon.

Etymology. This species is named after the characteristic shape of the accessory piece.

Haliotrema tubulovagina Yamaguti, 1968 (Figs. 6-8)

Type host of *Haliotrema tubulovagina* is *Zandus canescens*. The moorish idol, *Z. cornutus* is a new host record of the species. Its measurements and characters of chitin structures based on 5 mounted specimens show no distinct difference by comparing with original description, except two pairs of central anchors (dorsal anchor 58-63 long, ventral anchor 53-59 long) are slightly longer than those (dorsal anchor 37-58 long, ventral anchor 35-58 long) of specimens collected by Yamaguti (1968).

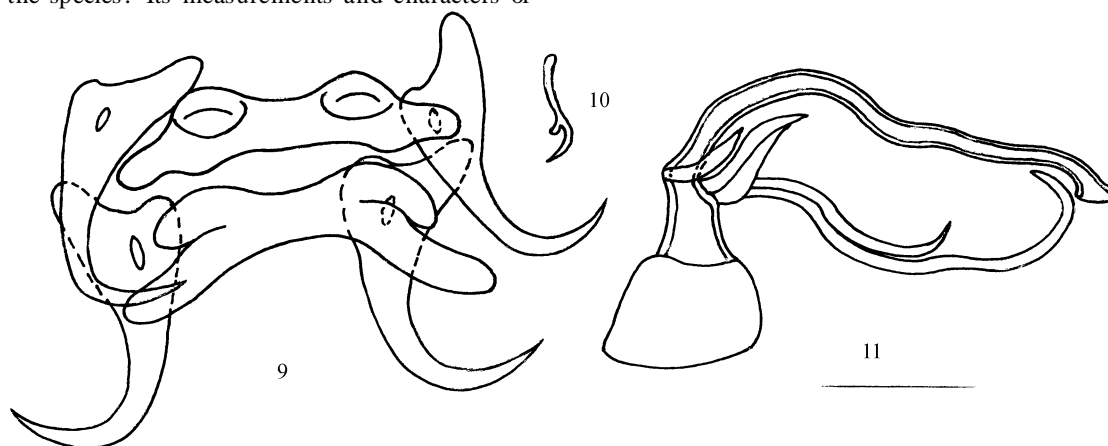


Figs. 6-8. *Haliotrema tubulovagina* Yamaguti, 1968. 6. Central anchors and connective bars, dorsal view. 7. Hook. 8. Copulatory apparatus, ventral view. Scale bar = 20 μ m.

***Haliotrema dempsteri* (Mizelle & Price, 1964) Young, 1968 (Figs. 9-11)**

Type host of *Haliotrema dempsteri* is *Zandus canescens*, others hosts have *Acanthurus mata*, *A. dussumieri* and *A. xanthopterus*. The moorish idol, *Z. cornutus* is a new host record of the species. Its measurements and characters of

chitin structures based on 7 mounted specimens show no distinct difference by comparing with original description and Young's (1968), except dorsal central anchor (length 36-41) is shorter than those (length 70-80) of specimens collected by Young (1968).



Figs. 9-11. *Haliotrema dempsteri* (Mizelle & Price, 1964) Young, 1968. 9. Central anchors and connective bars, dorsal view. 10. Hook. 11. Copulatory apparatus, ventral view. Scale bar = 20 μ m.

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海南岛海水鱼类寄生海盘虫属一新种及两新纪录 (单殖亚纲, 锚首虫科)

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摘要 首次报道了南海镰鱼 *Zandus cornutus* (Linnaeus) (采自海南岛三亚市) 鳃上寄生单殖吸虫, 锚首虫科 Ancyrocephalidae Bychowsky & Nagibina 1978, 海盘虫属 *Haliotrema* Johnston & Tieg, 1922 中的 1 新种及 2 新纪录种。而且, 镰鱼为管阴海盘虫 *H. tubulovagina* Yamaguti, 1968 和丹姆斯特海盘虫 *H. dempsteri* (Mizelle & Price, 1964) Young, 1968 的宿主新记录。文中量度微米 (μm), 模式标本保存于湖南文理学院生命科学系。

镰茎海盘虫, 新种 *Haliotrema sicklocirrus* sp. nov. (图 1~5)

宿主: 镰鱼 *Zandus cornutus* (Linnaeus)。

寄生部位: 鳃丝。海南三亚, 2004-03-16。

比较小型的锚首虫, 虫体长 337~405, 宽 67~80。背中央大钩全长 35~37, 钩基长 29~31, 钩尖长 7~10, 内突长 11~14, 外突长 4~5; 腹中央大钩全长 35~37, 钩基长 30~

33, 钩尖长 9~12, 内突长 8~10, 外突长 3~5。背联结片中部较平直, 亚中部向前稍隆起, 两端向后微弯, 大小 (5~6) \times (60~66); 腹联结片呈弧形弯曲, 两端较中部宽阔, 大小 (6~8) \times (55~63)。交接器由阴茎、基座和支持器组成。阴茎呈短管状、较直, 管长 19~22, 基径 7~11; 基部有一钟形基座, 高 10~13, 底径 10~13; 支持器长 45~53 (据弯度), 基端呈细条状, 宽约 2, 近基端弯折, 远端一侧呈膜状增宽, 似镰刀状。阴道弯管状, 长 30~35; 受精囊大小 25 \times 15。

新种在后吸器和交接器的形态构造上与寄生于两种蝴蝶鱼 *Chaetodon miliaris* (模式宿主)、*C. multicinctus* 的杯阴海盘虫 *H. scyphovagina* Yamaguti, 1968 近似。但二者的支持器不同, 已知种的支持器为一鞭状细丝, 新种则为一较长而弯折的细条状, 且远端一侧呈膜状增宽, 似镰刀状。

关键词 单殖吸虫, 锚首虫科, 海盘虫属, 海水鱼类, 海南岛。
中图分类号 Q959.153